

NUCLEIC ACID-BASED DETECTION

Abstract of the Disclosure

The invention relates to compositions, systems, and methods for simultaneously detecting the presence and quantity of one or more different compounds in a sample using aptamer beacons. Aptamer beacons are oligonucleotides that have a binding region that can bind to a non-nucleotide target molecule, such as a protein, a steroid, or an inorganic molecule. New aptamer beacons having binding regions configured to bind to different target molecules can be used in solution-based and solid, array-based systems. The aptamer beacons can be attached to solid supports, e.g., at different predetermined points in two-dimensional arrays. The invention includes devices, methods, and computer software for carrying out the methods.